W. H. KING.

Windlass.

No. 166,468. Patented Aug. 10, 1875.

Fig. 1.

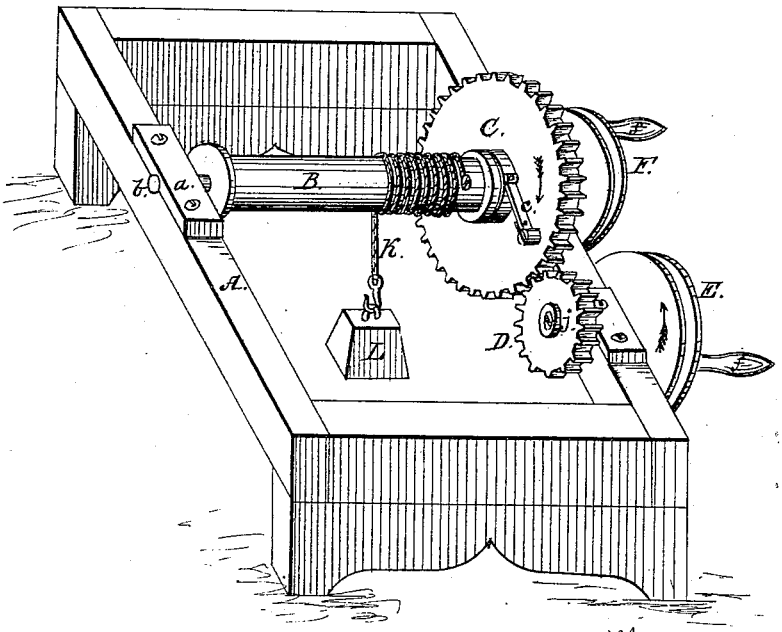
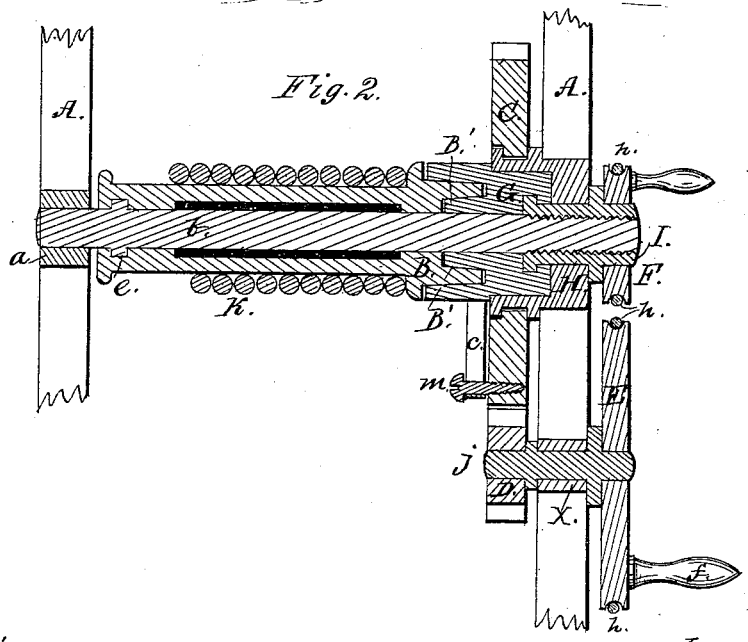


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

W. HASKELL KING, OF SOMERVILLE, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN W. LABAREE, OF SPRINGFIELD, MASSACHUSETTS.

IMPROVEMENT IN WINDLASSES.

Specification forming part of Letters Patent No. **166,468**, dated August 10, 1875; application filed June 12, 1875.

To all whom it may concern:

Be it known that I, W. HASKELL KING, of Somerville, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Balance-Elevators, which improvement is fully set forth in the following specifications, reference being had to the accompanying drawings, and to the letters of reference marked thereon, in which—

Figure 1 is a perspective view. Fig. 2 is a longitudinal transverse section, (with a portion of the frame A,) in which my invention is more clearly shown.

My invention relates to an apparatus used for raising weights, and is, perhaps, more especially adapted to the use of stores, warehouses, stone-quarries, and the like, but may be applied to the lifting of heavy bodies, or for any purpose where such an apparatus is required; but more particularly to that class of elevators which are so constructed as to create a counter-balance, and therefore will sustain a load at any point without the use of brakes or any other appliances, and which has a decided advantage over those ordinarily used for that purpose where a constant exertion is required to sustain the load while being suspended, but in the balance-elevator more especially it is obvious that for lowering the weight, or empty elevator or chain, some simple devise should be employed, which feature is the object of this improvement.

In the drawings, A represents the frame upon which the machinery is placed, and which may be made in any convenient form or of any material to suit the circumstances. *b* is the shaft, which rests in a metallic or other bearing, *a*, at one end, and having on the opposite end a screw-thread and nut, I, which takes its bearing in box H, as shown in Fig. 2. This box H is secured to the frame A. The nut I has a flange formed on one end, which is recessed into the clutch G. The nut I has also a collar formed upon it, which takes bearing in and against the end of box H, thus preventing an end thrust. Upon this nut a pulley, F, or its equivalent, is attached, which may be operated in the ordinary way with a rope, *h*, or by the use of a winch, *f*, as shown in the drawings, or by any convenient means, whereby the nut I may be turned at pleasure.

By this operation the shaft *b* is carried in a longitudinal direction to and fro, (but is prevented from revolving by the ordinary means of a dowel or feather, which works in a corresponding seat in box *a*,) and being connected to the drum B by the collar *e*. One end of the drum B is so constructed as to form one part of the friction-clutch, as shown at B′. Thus, when the nut is turned forward, the friction-clutch at B′, composed of the parts B and G, the friction-surfaces of which are made slightly inclined, is made to adhere to each other just in proportion to the forcing up of the nut I, and therefore is made to revolve with the part G, to which one end of strap *c* is firmly attached, the other end being attached by means of stud *m*, or its equivalent, to the tooth-wheel C, which also gears into pinion D, this pinion being attached to pulley E by means of the shaft J, which takes its bearing in box X, secured to frame A. Thus, by turning the pulley E in the direction of the arrow, either by the means of rope *h* or winch *f*, as most convenient, the tooth-wheel C will, as shown by the arrow, revolve in the opposite direction. The tooth-wheel C, or its equivalent, is so constructed as to move freely and independently on box H, which is firmly secured to frame A.

By means of strap *c* drum B, when firmly secured to part G by means of nut I working on shaft *b*, is made to move with the tooth-wheel C, and in the same direction, as shown by the arrow. The rope *k*, one end of which is fastened to drum B, is wound upon it, thus raising the load L, which is attached to the suspending end of the rope or chain *k*, as may be, and holding it suspended at any point; but, by unscrewing the nut I on the shaft *b* the clutch is gradually loosened. Thus, by the use of this nut I, the load or empty chain or platform, as may be, can be lowered at pleasure, either gradually or rapidly, or it may be instantly stopped, as the operator may desire, without the slow, tedious process of un-

winding the machine. By this arrangement the elevator is always under the perfect control of the operator, and is therefore much more rapid and satisfactory in its operation, beside being much safer and very much more convenient.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

An improved elevator, having the combination of the shaft *b*, nut I, drum B, clutch G, box H, tooth-wheel C, and strap *c*, in connection with or without the pinion D, substantially as and for the purpose described.

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Witnesses:
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